



ON THE COLLECTION OF THOMISIDAE (ARACHNIDA, ARANEAE) OF MUSEU NACIONAL, RIO DE JANEIRO (MNRJ), BRAZIL ¹

THIAGO DA SILVA-MOREIRA ²

ABSTRACT: The arachnid laboratory of the Museu Nacional, Rio de Janeiro is one of the oldest zoological research institutions in Brazil. It holds one of the most important collections of South America being depository of some of the most important Arachnological private collections such as those formerly amassed by Cândido Firmino de Mello-Leitão and Helia Eller Soares. The collection is deposited in a room with controlled humidity, temperature and light and the specimens are conserved in 75% alcohol within adequate vials. The lots are numbered, catalogued with the pertinent data registered in a MS Excel® spreadsheet (XLS format). Species of Thomisidae are listed in alphabetical order of genus regardless of the subfamilies they belong to. There is a total of 712 lots with more than 1700 specimens. The thomisid type collection contains 83 types registered in literature. Though the majority of the type lots is available for consulting there is still a significant part (25%) missing but none of them was considered lost. *Martus* Mello-Leitão 1943 is considered a *nomen nudum* and *Tmarus baptistai* comb. nov, *nom. novum* is proposed as a replacement name for *Martus albolineatus* Mello-Leitão 1943.

Key words: Arachnological Collections. Types Checklist. Collections Management. History of Zoology. *Martus*. *Tmarus baptistai*.

RESUMO: Sobre as coleções de Thomisidae (Arachnida, Araneae) do Museu Nacional, Rio de Janeiro, Brasil.

O Laboratório de Aracnologia do Museu Nacional, Rio de Janeiro é parte da mais antiga instituição de pesquisa em zoologia do Brasil. A instituição é repositório de uma das mais importantes coleções aracnológicas da América do Sul formada por importantes coleções particulares da área como as reunidas por Cândido Firmino de Mello Leitão e Helia Eller Soares. A coleção encontra-se depositada em uma sala com luz, umidade e temperatura controlada e os espécimes encontram-se em recipientes propícios, conservados em soluções alcoólicas a 75%. Os lotes encontram-se numerados e catalogados. As espécies de Thomisidae estão listadas em ordem alfabética independentemente da subfamília a que pertençam, resultando em um total de 712 lotes e mais de 1700 espécimes. A coleção de tipos da família pertencentes ao acervo do Museu registra 83 tipos de Thomisidae todos registrados com a literatura. A maioria dos tipos está disponível para consultas existindo porém uma significativa parte destes (25%) de paradeiro incerto. Nenhum contudo foi considerado perdido. *Martus* Mello-Leitão, 1943 é considerado *nomen nudum* e *Tmarus baptistai* comb. nov, *nom. novum* é proposto como nome substituto *Martus albolineatus* Mello-Leitão, 1943.

Palavras-chave: Coleções Aracnológicas. Lista de Tipos. Curadoria. História da Zoologia. *Martus*. *Tmarus baptistai*.

INTRODUCTION

The Museu Nacional, Rio de Janeiro (MNRJ – Portuguese acronym for Rio de Janeiro's National Museum) is the oldest scientific institution in Brazil. Its history begins early in the 19th Century, when the Portuguese Royal Family arrived in Brazil, escaping from the Napoleonic wars. The Museu Real (Royal Museum) was founded in 6th June 1818 by the Portuguese emperor D. João VI, hosted at first in Campo de Sant'Anna. In 1982 when D. Pedro I, son of D. João VI declared the independence of Brazil from Portugal, becoming the first Emperor

of Brazil, the Museu Real were renamed to Museu Imperial (Imperial Museum). This name remained until 1830 when the institution became to be known as Museu Nacional. With the birth of the Republic, in 1889 it was transferred to the Paço de São Cristóvão (São Cristóvão Imperial Palace), the former residence of the emperor in Quinta da Boa Vista where still lies till the present days. In 1946 it was incorporated by the Universidade Federal do Rio de Janeiro (Federal University of Rio de Janeiro) being since then a part of the Fórum de Ciência e Cultura. (Science and Culture Forum), one of the UFRJ's subdivisions. (KURY & NOGUEIRA, 1999).

¹ Submitted on December 20, 2007. Accepted on January 26, 2009.

² Museu Nacional/UFRJ, Departamento de Invertebrados. Quinta da Boa Vista, São Cristóvão, 20940-040, Rio de Janeiro, RJ, Brasil. E-mail: tmoreira_mnrj@yahoo.com.br.

A BRIEF HISTORY OF THE STUDY OF THOMISIDAE IN BRAZIL

The first works dealing on the Brazilian crab spiders came from the efforts to describe and catalog the New World Fauna in the 19th century made mainly by European zoologists such as KEYSERLING (1880), O. PICKARD-CAMBRIDGE (1869, 1877) and SIMON (1886; 1895). On the first half of the 20th century, started to appear the first works made by Brazilian researchers. The first major contribution to the knowledge of the Brazilian thomisid fauna made by Cândido Firmino de Mello Leitão, one of the most prolific Brazilian authors on arachnids ever with various works (*e.g.*, MELLO-LEITÃO 1924; 1925; 1932; 1940). One of them, “*Aphantochilidas e Thomisidas do Brasil*” (MELLO-LEITÃO, 1929) deserves special comments. This was an extensive monograph that listed all the species known from Brazilian territory till then (as well as added some new ones), being one of the most important works on South American Thomisidae until today. Other authors who devoted some of theirs publications to the family were PIZA (1933a; 1933b; 1934; 1935; 1936a; 1936b; 1937) and B. SOARES (1942; 1943a; 1943b; 1944), RINALDI (1983; 1984; 1988) and GARCIA-NETO (1989; 1991). Special mention should be given to Dr. Arno Lise, one of the few specialists on Thomisidae still active in present days, who has dedicated most of his career to the group not only with individual publications (LISE, 1973; 1979a; 1979b; 1980a; 1980b; 1981a; 1981b; 2005) but also with his former students (ESMERIO & LISE, 1996; BONALDO & LISE, 2001). In spite of this huge amount of works dealing with this family, many of the problems involving its internal relationships or their phylogenetical position among the spiders still persist (BENJAMIN ET.AL 2008).

OBJECTIVES

The objective of this work is to relate the present state of the holdings of the spider family Thomisidae collection in MNRJ, as well as provide an annotated checklist of the type lots belonging to that collection.

MATERIAL AND METHODS

CONSERVATION AND STORAGE

The specimens are all conserved in standard 75% alcoholic solution, which is the most appropriate

substance to the conservation of invertebrates (STODDARD, 1989; MARTINS 1994; SIMMONS, 1995 SENDALL & HUGHES 1997; SIMMONS 2001), inside cotton-stoppered glass vials of different sizes (accordingly with the size of the specimens) individualized for each lot.

LABELING AND DATABASE

There is an individualized label for each lot containing the following information (when available): *Accession Number*, *Country*, *First Order Political Division*, *Locality*, *Date of Collection* and *Collector*. A second label indicates: the *Identification* (species or the lowest taxonomic rank possible), *Counting* (number of males/females/juveniles) and the name of the *Determiner*. When an old label is available it is always kept for historical purposes. The labels are all in non-acid paper with the information printed with Inkjet printers accordingly to the recommendations presented in several papers (WILLIAMS & HAWKS 1986; WOOD & WILLIAMS 1983; ANDREI & GENOWAYS, 1991).

Every lot receives an unique identification accession number preceded by the Museu Nacional acronym (*e.g.*: MNRJ 12345) which permits any information to be quickly recovered. Through the history, many of the published numbers for Araneae refer to the old Mello-Leitão's Private Collection (MLPC). Later, those numbers have been replaced by MNRJ numbers, which are those present in the database and in current usage. Herein their old private collections numbers are included before the MNRJ number (and this is particularly important concerning the MLPC numbers in the type collection) for historical purposes. Whenever additional information could be retrieved from the card labels, or old Register Books it is included on the database. Notice that in the earlier days of the existence of the exhibition of Museu Nacional, Mello-Leitão many times put registered specimens of his own collection in the exposition. Today there is a revitalization of the museum exhibits in process and all the specimens are being replaced, therefore there are few specimens on the public exposition. To assure the preservation of the information, this specimens are cleared marked on the database as seen below.

The database is running in the format of a MS Excel® spreadsheet (XLS. format) containing the following information: *Genus*; *Species*; *Author* and

Data (of the original description. May be between brackets when convenient); *Family*; *Historic Name or Synonym*; *Determiner*; *Accession Number*; *Status* (if it is a type and of which kind) *Number of Males*; *Number of Females*; *Number of Juveniles*; *Total of Individuals*; *Country*; *State* (or equivalent country political subdivision) *City*; *Locality [or Conservation Unity]*; *Collector*; *Date*; *Availability*; *Loan Information*; *Habitat/Observations*; *Order*; *Bibliographical Citations or Problems* and *Notes*. The text is formatted and colored according to a pre-determinate code: *Simple* (without formatting): Status ok; *Bold formatted* = Type lot; *Italic Formatted* = Need new number or label; *Red Colored* = Need to check; *Blue colored* = On loan; *Green Colored* = On exposition; *Purple Colored* = Bad conservation status; *Brown colored* = Lost.

The list of the MNRJ Thomisidae types was based in a pre-existent and out-to-date one from Baptista *et al.* (unpublished data), and it is presented here reviewed with their current availability status updated, following the presented structure: 1) current name and combination (accordingly to PLATNICK 2008); 2) the original description work and original combination (if that applies) 3) the original name and author of taxonomical change (if any), 4) number, sex and status of specimens, 5) locality, 6) date, 7) collector, 8) collection number, 9) notes on the availability and 10) other meaningful observations. Comments on these data are given between brackets when some discrepancy occurs or some additional information is deemed necessary.

The following criteria are used to evaluate the status of the specimens. When the type is in the collection at this time or has its loan invoice proper kept and filed, the status "AVAILABLE" is used.

When the specimen is not in the collection and its location could not be confirmed, we used the expression "NOT LOCATED". This status refers to samples that clearly belong to MNRJ, as MNRJ numbers have been assigned to them by former curators, have been indicated as being deposited in MNRJ in the original description or there are notes about them in the collection handwritten cards. We have chosen to use the expression "NOT LOCATED" instead of "LOST" for all the material we could not find in our collection, due to the many uncertainties about old loans and repository institutions. We considered "LOST" only the types whose vials were found with nothing but the old

labels inside or those that undergo a well documented accident (e.g. material lost during shipment or mummified by fungus due to bad curatorship) which certainly cause the destruction or loss of the lot.

RESULTS

STATE OF THE ART

The Thomisidae collection of Museu Nacional, comprises around 712 lots (575 numbered and 127 not numbered) so far, resulting in more than 1700 specimens. This corresponds to approximately 12.5% of the total specimens registered (with the MNRJ accession number), almost all of them (95%) in perfect conditions of conservation and storage, being fit to taxonomical and systematic studies. The lots are organized in individual genus recipients stored by alphabetical order regardless of the subfamilies they are currently assigned.

The bulk of the collection, as expected, refers to the Brazilian territory with 554 lots and 1192 specimens. In spite of this, there are representatives (including types) from other countries, most of them from other South American nations (see Tab.1). The best represented states are Rio de Janeiro, with 309 specimens in 129 lots, followed by Minas Gerais (37 lots, 230 specimens), Rio Grande do Sul (46 lots, 144 specimens), São Paulo (71 lots, 124 specimens) and Bahia (47 lots, 59 specimens). The less representative states are Amapá and Rio Grande do Norte with one specimen each (Tab.2).

TABLE 1. Total lots on the MNRJ Thomisidae collection.

COUNTRY	LOTS	INDIVIDUALS	TYPES
Argentina	6	9	3
Algeria	1	1	0
Brazil	544	1192	76
Chile	11	45	4
Europe	8	8	0
Paraguay	1	1	1
Peru	1	1	0
Uruguay	3	12	0
Backlog	127	510	
TOTAL	702	1779	84

TABLE 2. Distribution of the lots of Thomisidae on the Brazilian territory.

STATE (STATE ACRONYM)	LOTS	INDIVIDUALS	TYPES
Rio de Janeiro (RJ)	193	309	30
Minas Gerais (MG)	37	230	9
Rio Grande do Sul (RS)	14	144	10
São Paulo (SP)	71	124	2
Rondônia (RO)	14	64	0
Pernambuco (PE)	22	63	4
Bahia (BA)	47	59	2
Paraná (PR)	37	54	7
Espírito Santo (ES)	31	42	2
Mato Grosso (MT)	20	34	6
Pará (PA)	6	30	2
Paraíba (PB)	8	13	1
Alagoas (AL)	2	8	0
Amazonas (AM)	4	6	0
Distrito Federal (DF)	3	4	0
Santa Catarina (SC)	4	4	1
Amapá (AP)	1	1	0
Rio Grande do Norte (RN)	1	1	0
TOTAL	515	1190	76

THE TYPE LIST

The type collection bears 83 types registered in literature belonging to MNRJ. From those, 63 are available, and 21 were not located. Despite the majority of the lots being available, a significant part (circa 25%) are still missing. None of them however, was considered lost.

THOMISIDAE SUNDEVALL, 1833

(OBS: for *Sidyma spinifera* Mello-Leitão, 1943; see *S. multispinulosa* Mello-Leitão, 1944)

Transferred to other family:

Dossenus fluminensis (Mello-Leitão, 1917)

TRECHALEIDAE: Original description: *Marxiellia fluminensis* MELLO-LEITÃO, 1929: 50, fig 39 (Transferred by MELLO-LEITÃO, 1947, considered nomen dubium by SILVA, LISE & CARICO, 2007), ♀ immature holotype. BRAZIL. Rio de Janeiro. Pinheiro [currently Pirai, Pinheiral]. Mello-Leitão col. MLPC 368, currently MNRJ 922. NOT LOCATED

1. *Acentroscelus muricatus* Mello-Leitão, 1947
Original description: MELLO-LEITÃO, 1947: 14 figs.

32, 47. 1♀, 1♂ immature syntypes. BRAZIL. Minas Gerais. Carmo do Rio Claro. José Cândido de Mello Carvalho col. MNRJ. NOT LOCATED.

2. *Acentroscelus ramboi* Mello-Leitão, 1943.

Original description: MELLO-LEITÃO, 1943c: 201, fig. 30. 1♀ holotype. BRAZIL. Rio Grande do Sul. Balduino Rambo col. MNRJ 42524. AVAILABLE.

3. *Acentroscelus secundus* Mello-Leitão, 1929

Original description: MELLO-LEITÃO, 1929: 176, figs. 18, 18a-b. ♀ holotype. BRAZIL. Rio de Janeiro. Petrópolis. Thomas Borgmeyer col. MLPC 1000 [or 1002]. MNRJ 878. NOT LOCATED.

4. *Acracanthostoma bicornutum* Mello-Leitão, 1917

Original description: MELLO-LEITÃO, 1917c: 117, fig. 8. ♀ holotype BRAZIL. Rio de Janeiro. Pinheiro [currently Pirai, Pinheiral]. Mello-Leitão col. MLPC 372. MNRJ 879. NOT LOCATED.

5. *Deltoclita bioculata* Mello-Leitão, 1929

Original description: MELLO-LEITÃO, 1929: 241, figs. 31; 31a. ♀ immature holotype. BRAZIL. Minas Gerais. Caxambu. Mello-Leitão col. MLPC 981. MNRJ 906. AVAILABLE.

6. *Deltoclita rubra* Mello-Leitão, 1943

Original description: MELLO-LEITÃO, 1943a: 203, fig. 32.

1♀ holotype. BRAZIL. Rio Grande do Sul. Balduino Rambo col. MNRJ 41747. AVAILABLE.

7. *Epicadinus polyophtalmus* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 102, fig. 46. 1♀ holotype. BRAZIL. Rio de Janeiro. Niterói. Mello-Leitão col. MLPC 901. MNRJ 913. NOT LOCATED.

8. *Epicadus nigronotatus* Mello-Leitão, 1940
Original description: MELLO-LEITÃO, 1940: 213. 1♀ holotype. BRAZIL. Espírito Santo. Goitacazes. Mario Rosa col. 1936-1937. MNRJ 58252. AVAILABLE.

9. *Epicadus planus* Mello-Leitão, 1932
Original description: MELLO-LEITÃO, 1932: 73. 1♀ holotype. BRAZIL. Bahia. Ilhéus. E. May col. MNRJ 14205. AVAILABLE.

10. *Epicadus rubripes* Mello-Leitão, 1924
Original description: MELLO-LEITÃO, 1924: 280. 1♀ holotype. BRAZIL. Rio de Janeiro. Niterói. Mello-Leitão col. MLPC 869, currently MNRJ 901. AVAILABLE.
Remark – Type is dry.

11. *Erissoides argentinensis* Mello-Leitão, 1931
Original description: MELLO-LEITÃO, 1931: 96. 1♀ holotype. ARGENTINA. Buenos Aires. Rosas. Jan Daguerre col. Collected in nests of wasp, *Sceliphron figulus* (Dahlbom, 1843) [sic - currently *Sceliphron asiaticus asiaticus* Linnaeus, 1758] MNRJ (Unknown number). NOT LOCATED.

12. *Erissoides vittatus* Mello-Leitão, 1949
Original description: MELLO-LEITÃO, 1949: 13, figs. 13-14. 2 1♀ syntypes. BRAZIL. Mato Grosso. Mouth of Koluene [Culuene] river. José Cândido de Mello Carvalho col. IV.1947. MNRJ. NOT LOCATED.

13. *Erissus roseus* Mello-Leitão, 1943
Original description: MELLO-LEITÃO, 1943d: 167. 1♀ holotype. BRAZIL. Paraíba. Soledade. Rudolf von Ihering col. MNRJ 41838. NOT LOCATED.

14. *Martus albolineatus* Mello-Leitão, 1943
Original description: MELLO-LEITÃO, 1946d: 171. 1♂ holotype. BRAZIL. São Paulo. Iguape. Othon Leonardos col. MNRJ 41877. AVAILABLE.
Remark – Following ROEWER (1955: 811), the genus *Martus* is listed as valid in recent catalogs. However, Mello-Leitão has not indicated he wanted to describe a new genus in his paper. The spelling *Martus* appears only as part of the specific name *Martus albolineatus* (which is reinforced by the alphabetical ordination broken only by this single name). The holotype is labeled *Tmarus albolineatus*. So, it seems very likely that *Martus* is misspelling of *Tmarus* and can be consider a *nomen nudum* (only a printing

lapsus). Accordingly to the ICZN (4th ed., 1999, article 11.9.3.1), a specific name published in association with an invalid generic name is considered valid. Since (as already stated) Mello-Leitão obviously intended to describe the species as *Tmarus albolineatus* Mello-Leitão, 1943 *comb. nov.*, and this last name is pre-occupied by Keyserling (1880: 159), here the replacement name *Tmarus baptistai comb. nov. nom. novum.* is proposed as an homage to Dr. Renner Baptista, who first noticed this lapsus.

15. *Misumena viridans* Mello-Leitão, 1917
Original description: MELLO-LEITÃO, 1917a: 94. 1♀ holotype. BRAZIL. Rio de Janeiro. Rio de Janeiro. MLPC. MNRJ? [Repository not clear]. NOT LOCATED.
Remark – Even though the repository is not explicited in the original description, the collector (Tranquilino Leitão, Mello-Leitão's brother) passed all its exemplars to Mello-Leitão. Therefore is presumable that the type should have been incorporated to the MNRJ collection.

16. *Misumenoides dasysternon* Mello-Leitão, 1943
Original description: MELLO-LEITÃO, b: 406. 8♂, 1♀ syntypes, 8 immatures. CHILE. Arica. Arica. José Cândido de Mello Carvalho col. MNRJ s/n. AVAILABLE.

17. *Misumenoides gerschmanae* Mello-Leitão, 1944
Original description: MELLO-LEITÃO, 1944a: 365-366. 1♀ paratype [not cited in description]. ARGENTINA. Buenos Aires. Ingeniero Maschwitz col. MNRJ s/n. AVAILABLE.

Remark – This specimen was clearly labeled as type by Mello-Leitão, despite the different data.

18. *Misumenoides paucispinosus* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 219, figs. 25, 25a. 1♀ immature holotype. BRAZIL. Rio de Janeiro. Niterói. Aguirre col. MLPC 896, currently MNRJ 897. AVAILABLE.

19. *Misumenoides roseiceps* Mello-Leitão, 1949
Original description: MELLO-LEITÃO, 1949: 14, figs. 15-16. 1♀ holotype. BRAZIL. Mato Grosso. Mouth of Koluene [Culuene] river. José Cândido de Mello Carvalho col. IV.1947. MNRJ. AVAILABLE.

20. *Misumenoides rubroniger* Mello-Leitão, 1947
Original description: MELLO-LEITÃO, 1947: 15, fig. 45. 1♀ immature holotype. BRAZIL. Minas Gerais. Carmo do Rio Claro. José Cândido de Mello Carvalho col. MNRJ. AVAILABLE.

21. *Misumenoides vulneratus* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 216. 1♀ syntype. BRAZIL. Rio de Janeiro. Tapera [currently

Moreno, Bonança]. Bento Pickel col. MNRJ 42576. AVAILABLE.

22. *Misumenops argenteus* (Mello-Leitão, 1929)
Original description: *Runcinioides argenteus* MELLO-LEITÃO, 1929: 211, fig. 22, 22a-b. (transferred by RINALDI, 1988: 20). 1♀ holotype. BRAZIL. Rio de Janeiro. Petrópolis. Mello-Leitão col. MLPC 898, currently MNRJ 898. AVAILABLE.

Remark – The type was labeled with a name *in schedula*, but the specimen agrees very well with the description.

23. *Misumenops argenteus* (Mello-Leitão, 1929)
Original description: *Runcinioides nigromaculatus* MELLO-LEITÃO, 1929: 211, fig. 23, 23a-b. (transferred by RINALDI, 1988: 20). 2♀ immature syntypes. BRAZIL. Rio de Janeiro. Petrópolis. Mello-Leitão col. MLPC 879, currently MNRJ 899. AVAILABLE.

24. *Misumenops biannulipes* (Mello-Leitão, 1929)
Original description: *Metadiea biannulipes* MELLO-LEITÃO, 1929: 238. (transferred by RINALDI, 1983: 147). 2♀ syntypes. BRAZIL. Pernambuco. Tapera [currently Moreno, Bonança]. Bento Pickel col. MNRJ 905. AVAILABLE.

25. *Misumenops callinurus* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 234. 1♀ holotype. BRAZIL. Rio de Janeiro. Rio de Janeiro, Tijuca. H. Fialho col. MLPC 1080. MNRJ 893. AVAILABLE.

26. *Misumenops fluminensis* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 236, figs. 30, 30a-b. 1♀ holotype. BRAZIL. Rio de Janeiro. Niterói. Mello-Leitão col. MLPC 870. MNRJ 897. AVAILABLE.

27. *Misumenops haemorrhous* Mello-Leitão, 1949
Original description: MELLO-LEITÃO, 1949: 15, fig. 17. 1♀ holotype. BRAZIL. Mato Grosso. Mouth of Koluene [Culuene] river. José Cândido de Mello Carvalho col. IV.1947. MNRJ. AVAILABLE.

28. *Misumenops longispinosus* (Mello-Leitão, 1949)
Original description: *Runcinioides longispinosus* MELLO-LEITÃO, 1949: 16, fig. 18. (transferred by RINALDI, 1988: 19). 1♂ holotype. BRAZIL. Mato Grosso. Mouth of Koluene [Culuene] river. José Cândido de Mello Carvalho col. IV.1947. MNRJ. NOT LOCATED.

29. *Misumenops paranensis* (Mello-Leitão, 1932)
Original description: *Metadiea paranensis* MELLO-LEITÃO, 1932: 74. (transferred by Rinaldi, 1983: 147). 1♂ holotype. BRAZIL. Paraná. Rio Negro. Frades Franciscanos col. MNRJ 14162. AVAILABLE.

30. *Misumenops schiapelliae* Mello-Leitão, 1944
Original description: MELLO-LEITÃO, 1944a: 368, fig. 59. 1♂ paratype [not cited in description]. ARGENTINA. Buenos Aires. Tigre, Guayracá. A. Prosén col. MNRJ 2665. AVAILABLE.

31. *Misumenops silvarum* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 288. 1♀ holotype. BRAZIL. Espírito Santo. Lacerda Guimarães col. MLPC 382. MNRJ 118. AVAILABLE.

32. *Misumenops spinitarsis* Mello-Leitão, 1932
Original description: MELLO-LEITÃO, 1932: 74. 1♀ immature holotype. BRAZIL. Amazonas. Rio Jaminauá. Braulino de Carvalho col. MNRJ 14158. AVAILABLE.

33. *Misumenops variegatus* Mello-Leitão, 1917
Original description: MELLO-LEITÃO, 1917a: 94. 1♀ syntype. BRAZIL. São Paulo. Hammond [Guariba, Hammond, old railway station]. Tranquilino Leitão col. MNRJ? [Repository not clear]. NOT LOCATED.
Remark – see the remark on *Misumena viridans*.

34. *Misumenops viridans* Mello-Leitão, 1917
Original description: MELLO-LEITÃO, 1917a: 94. 1♀ syntype. BRAZIL. Rio de Janeiro. Rio de Janeiro. Clodoaldo Devoto col. MNRJ? [Repository not clear]. NOT LOCATED.

Remark – Even though the repository is not explicit in the original description, this collector was notoriously an employee of Mello-Leitão. So it is very likely that all his specimens belong to Mello-Leitão private collection.

35. *Misumenops zeugma* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 235. 1♀ holotype. BRAZIL. Pernambuco. Tapera [currently Moreno, Bonança] MNRJ 890. AVAILABLE.

Remark – The type was labeled with an name *in schedula*, but the specimen matches very well the original description.

36. *Onocolus intermedius*: (Mello-Leitão, 1929)
Original description: *Paronocolus episcopus* MELLO-LEITÃO, 1929: 48. (transferred by LISE, 1981a: 39). 1♀ holotype. BRAZIL. Rio de Janeiro. Rio de Janeiro, Gávea. Roger Arlé col. MNRJ 41770. AVAILABLE.

37. *Onocolus intermedius* (Mello-Leitão, 1929)
Original description: *Paronocolus intermedius* MELLO-LEITÃO, 1929: 79, fig.s 41, 41a. (Transferred by LISE, 1981a: 39): 8♂ holotype. BRAZIL. Rio de Janeiro. Niterói. Mello-Leitão col. MLPC 902. MNRJ 916. AVAILABLE.

38. *Onocolus infelix* Mello-Leitão, 1941
Original description: MELLO-LEITÃO, 1941: 251. 1♀

holotype. BRAZIL. Paraná. Rio Negro. Zeno Rohr col. MNRJ 58245 [not 58426 as in description]. AVAILABLE.

39. *Philogaeus echimys* Mello-Leitão, 1943

Original description: MELLO-LEITÃO, 1943b: 407, fig. 4. 1♂ immature holotype. CHILE. Antofagasta. Antofagasta [Arica in description]. José Cândido de Mello Carvalho col. MNRJ 2318. AVAILABLE.

40. *Sidymella lucida* (Keyserling, 1880)

Original description: *Sidyma cancellata* MELLO-LEITÃO, 1943c: 207, fig. 34. 1♂ holotype. BRAZIL. Rio Grande do Sul. Balduino Rambo col. MNRJ 41748. AVAILABLE.

Remark – *Sydymella* is a replacement name for *Sidyma* Simon 1985 (praeocc. by *Sidyma*, F. Walker 1856 (Lepidoptera) - STRAND 1942).

41. *Sidymella kolpogaster* (Lise, 1973)

Original description: *Sidyma kolpogaster* LISE, 1973: 5, fig. 5-9. 1♀ holotype. BRAZIL. Paraná. Rio Negro. Franciscanos col. MNRJ 58065. AVAILABLE.

42. *Sidymella longispina* (Mello-Leitão, 1943c)

Original description: *Sidyma longispina*. MELLO-LEITÃO, 1943c: 208, fig. 35. 1♀ holotype, 1♀ immature. BRAZIL. Rio Grande do Sul. Balduino Rambo col. MNRJ 41911. AVAILABLE.

43. *Sidymella multispinulosa* (Mello-Leitão, 1944).

Original description: *Sidyma spinifera* MELLO-LEITÃO, 1943c: 209, fig. 36(preocc.). *Sidyma multispinulosa*. Replacement name (MELLO-LEITÃO, 1944c:4). 1♀ holotype. BRAZIL. Santa Catarina [Rio Grande do Sul in the description]. Itapiranga. Pio Buck col. MNRJ 41934. AVAILABLE.

44. *Stephanopsis borgmeyeri* Mello-Leitão, 1929

Original description: MELLO-LEITÃO, 1929: 54, fig. 40. 1♀ holotype. BRAZIL. Rio de Janeiro. Petrópolis. Thomas Borgmeyer col. MLPC 999. MNRJ 917. AVAILABLE.

45. *Stephanopsis histryx* Mello-Leitão, 1951

Original description: MELLO-LEITÃO, 1951: 333. 1♀ holotype. CHILE. Llanquihue. Maullín. Rafael Barros V. col. MNRJ. AVAILABLE.

46. *Stephanopsis maulliniana* Mello-Leitão, 1951

Original description: MELLO-LEITÃO, 1951: 334. 1♀ holotype. CHILE. Llanquihue. Maullín. Rafael Barros V. col. MNRJ. AVAILABLE.

47. *Strophius didacticus* Mello-Leitão, 1917

Original description: MELLO-LEITÃO, 1917c: 120. 1♀ holotype. BRAZIL. Rio de Janeiro. Nova Iguaçu [Pirai, Pinheiral after collection handwritten card].

Henrique Blanc de Freitas col. [Mello-Leitão col. after collection handwritten card]. MLPC 344. MNRJ 861. NOT LOCATED.

48. *Strophius mendax* Mello-Leitão, 1929

Original description: MELLO-LEITÃO, 1929: 36, figs. 3, 3a. 1♂, 1♀ syntypes. BRAZIL. Rio de Janeiro. Niterói. Jean Vellard col. MNRJ. NOT LOCATED.

49. *Synaemops nigradorsi* Mello-Leitão, 1929

Original description: MELLO-LEITÃO, 1929: 208, figs. 20, 21a-b. 1♀ holotype. BRAZIL. Rio de Janeiro. Rio de Janeiro. Mello-Leitão col. MLPC 900. MNRJ 902. AVAILABLE.

50. *Synaemops notabilis* Mello-Leitão, 1941

Original description: MELLO-LEITÃO, 1941: 251. 2♂ syntypes. BRAZIL. Paraná. Rio Negro. Franciscanos col. MNRJ 58261. NOT LOCATED.

51. *Synaemops rubropunctatus* Mello-Leitão, 1929

Original description: MELLO-LEITÃO, 1929: 209, figs. 21, 21a-b. 1♀ immature holotype. BRAZIL. Rio de Janeiro. Rio de Janeiro. MLPC 871. MNRJ 903. AVAILABLE.

52. *Synema interjectivum* Mello-Leitão, 1947

61. Original description: MELLO-LEITÃO, 1947: 16, fig. 28. 1♂ holotype. BRAZIL. Minas Gerais. Carmo do Rio Claro. José Cândido de Mello Carvalho col. MNRJ. AVAILABLE.

53. *Synema ternetzi* Mello-Leitão, 1939

Original description: MELLO-LEITÃO, 1939a: 77, figs. 63-64. 1♂ paralectotype [see below]. PARAGUAY. Ternetz col. MNRJ 56700. AVAILABLE.

Remark – As Mello-Leitão in the original description did not give the accession number of the lot nor mentioned any other specimens belonging to the analyzed material and this specimen is clearly labeled as type, it could be possible that this may be the holotype never returned to the Naturhistorischen Museum in Basel. Accordingly to the head curator of the Basel Museum, Dr. Ambros Hänggi, it was found that there are two lots of *S. ternetzi* on Basel collection labeled as “Lectotypus and Paratypoid” (coll. numbers 1181a and 1181b respectively). Accordingly to Dr. Hänggi (2008 in litt.) the information on Basel Museum’s database came from a very reliable source (L. Forcart in FORCART 1961) who was familiarized with the loan responsible. Therefore, it is considered here that the species was described based on a type series including the exemplars of Basel Naturhistorischen Museums (the lectotype + paralectotype) and the exemplar belonging to Museu Nacional (a paralectotype), which was not cited in the original description.

54. *Synstrophius blanci* Mello-Leitão, 1917
Original description: MELLO-LEITÃO, 1917b: 11.
Currently: *Parastrophius blanci* (transferred by MELLO-LEITÃO, 1925: 455). 1♂, 1♀ holotype. BRAZIL. Rio de Janeiro. Nova Iguaçu. Henrique Blanc de Freitas col. MLPC. MNRJ 860. NOT LOCATED.
55. *Titidiops melanosternon* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 189, figs. 19, 19a-c. 1♀ holotype. BRAZIL. Rio de Janeiro. Mendes. Mello-Leitão col. MLPC 373. MNRJ 873. AVAILABLE.
56. *Titidius albiscriptus* Mello-Leitão, 1941
Original description: MELLO-LEITÃO, 1941: 251. 2 1♀ syntypes. BRAZIL. Paraná. Rio Negro. MNRJ 58279. AVAILABLE.
57. *Titidius curvilineatus* Mello-Leitão, 1941
Original description: MELLO-LEITÃO, 1941: 252. 3 1♂, 1♀ syntypes. BRAZIL. Paraná. Rio Negro. MNRJ 58185. NOT LOCATED.
58. *Titidius difficilis* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 183. 1♀ holotype. BRAZIL. Rio de Janeiro. Petrópolis. Thomas Borgmeyer col. MLPC 797. MNRJ 865. NOT LOCATED.
59. *Titidius geometricus* Mello-Leitão, 1943
Original description: MELLO-LEITÃO, 1943c: 210.
Nomen dubium: ESMERIO & LISE, 1996: 189. 1♀ holotype. BRAZIL. Rio Grande do Sul. Porto Alegre [in handwritten collection card] Balduino Rambo col. MNRJ 13859 [ex 42526 as in description]. NOT LOCATED.
60. *Titidius longicaudatus* Mello-Leitão, 1943
Original description: MELLO-LEITÃO, 1943c: 210, figs. 37-38. 1♀ holotype. BRAZIL. Rio Grande do Sul. Balduino Rambo col. MNRJ 41751. AVAILABLE.
61. *Titidius pauper* Mello-Leitão, 1947
Original description: MELLO-LEITÃO, 1947: 18, figs. 36-37, 42. 1♂, 2 1♀ syntypes. BRAZIL. Minas Gerais. Carmo do Rio Claro. José Cândido de Mello Carvalho col. MNRJ. AVAILABLE.
62. *Tmarus aberrans* Mello-Leitão, 1944
Original description: MELLO-LEITÃO, 1944b: 10. 1♀ holotype. BRAZIL. Mato Grosso. Barra do Tapirapés [currently Santa Terezinha]. Antenor Leitão de Carvalho col. MNRJ 2322. AVAILABLE.
63. *Tmarus atypicus* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 43, fig. 7, 7a-b. 1♀ holotype. BRAZIL. Minas Gerais. Caxambu. Mello-Leitão col. MLPC 985. MNRJ 877. AVAILABLE.
64. *Tmarus bifidipalpus* Mello-Leitão, 1943
Original description: MELLO-LEITÃO, 1943c: 211. 1♂ holotype. BRAZIL. Rio Grande do Sul. Balduino Rambo col. MNRJ 41752. NOT LOCATED.
65. *Tmarus borgmeyeri* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 146, figs. 8, 8a. 1♂ holotype. BRAZIL. Rio de Janeiro. Petrópolis. Thomas Borgmeyer col. MLPC 798. MNRJ 870. AVAILABLE.
66. *Tmarus caxambuensis* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 173, figs. 16, 16a-b. 2♀ syntypes. BRAZIL. Minas Gerais. Caxambu. Mello-Leitão col. MLPC 984. MNRJ 863. AVAILABLE.
Remark – The types were labeled *Tmarus minensis* Mello-Leitão, 1929, but they agree very well with the original description of *Tmarus caxambuensis* and are not conspecific with *T. minensis*. We consider them as the syntypes of *T. caxambuensis*.
67. *Tmarus formosus* Mello-Leitão, 1917
Original description: MELLO-LEITÃO, 1917c: 120, fig. 1. 1♂ 2 immature syntypes. BRAZIL. Rio de Janeiro. Pinheiro [currently Pirai, Pinheiral]. Mello-Leitão col. MLPC 347. MNRJ 866. AVAILABLE.
68. *Tmarus incognitus* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 137, figs. 5, 5a-b. 1♀ holotype. BRAZIL. Rio de Janeiro. Petrópolis. Mello-Leitão col. MLPC 895. MNRJ 871. AVAILABLE.
69. *Tmarus infrasigillatus* Mello-Leitão, 1947
Original description: MELLO-LEITÃO, 1947: 19, fig. 48. 1♀ immature holotype. BRAZIL. Minas Gerais. Carmo do Rio Claro. José Cândido de Mello Carvalho col. MNRJ 2321. AVAILABLE.
70. *Tmarus metropolitanus* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 136. 1♀ holotype. BRAZIL. Rio de Janeiro. Rio de Janeiro. Mello-Leitão col. MLPC 374. MNRJ 868. AVAILABLE.
71. *Tmarus minensis* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 174, figs. 17, 17a-b. 2♀ syntypes. BRAZIL. Minas Gerais. Caxambu. Mello-Leitão col. MLPC 982. MNRJ 864. AVAILABLE.
72. *Tmarus parallelus* Mello-Leitão, 1943
Original description: MELLO-LEITÃO, 1943: 171. 1♀ holotype. BRAZIL. Bahia. Ilhéus. E. May col. MNRJ 41921. AVAILABLE.
73. *Tmarus perditus* Mello-Leitão, 1929
Original description: MELLO-LEITÃO, 1929: 154, figs. 9, 9a-b. 1♀ holotype. BRAZIL. Rio de Janeiro.

Petrópolis. Mello-Leitão col. MLPC 896. MNRJ 872. AVAILABLE.

74. *Tmarus planifrons* Mello-Leitão, 1943

Original description: MELLO-LEITÃO, 1943c: 212, fig. 39. 1♀ holotype. BRAZIL. Rio Grande do Sul. Balduino Rambo col. MNRJ 41753. AVAILABLE.

75. *Tmarus pleuronotatus* Mello-Leitão, 1941

Original description: MELLO-LEITÃO, 1941: 253. 1♀ holotype. BRAZIL. Paraná. Rio Negro [Cachoeira. fig. Lange de Morretes col. in description]. MNRJ 58264. AVAILABLE.

76. *Tmarus polyandrus* Mello-Leitão, 1929

Original description: MELLO-LEITÃO, 1929: 155, figs. 10, 10a-b. 1♂, 1♀ syntypes, immature. BRAZIL. Rio de Janeiro. Petrópolis. Mello-Leitão col. MLPC 800. MNRJ 875. AVAILABLE.

Remark – Male syntype without both palpi.

77. *Tmarus primitivus* Mello-Leitão, 1929

Original description: MELLO-LEITÃO, 1929: 140, figs. 6, 6a-b. 1♀ holotype. BRAZIL. Rio de Janeiro. Pinheiro [currently Pirai, Pinheiral]. Thomaz Borgmeyer col. MLPC 349. MNRJ 874. AVAILABLE.

78. *Tmarus pugnax* Mello-Leitão, 1929

Original description: MELLO-LEITÃO, 1929: 171, figs. 15, 15a-b. 1♀ holotype. BRAZIL. Rio Grande do Sul. O. Camará Sobrinho col. MLPC 733. MNRJ 876. AVAILABLE.

79. *Tmarus striolatus* Mello-Leitão, 1943

Original description: MELLO-LEITÃO, 1943c: 214, fig. 40. 1♂, 1♀ syntypes. BRAZIL. Rio Grande do Sul. Balduino Rambo col. MNRJ 42523. AVAILABLE.

Remark – Male syntype without both palpi.

80. *Tmarus villasboasi* Mello-Leitão, 1949

Original description: MELLO-LEITÃO, 1949: 17, figs. 19-20. 1♀ holotype. BRAZIL. Mato Grosso. Mouth of Koluene [Culuene] river. José Cândido de Mello Carvalho col. IV.1947. MNRJ 2319. AVAILABLE.

81. *Tobias corticatus* Mello-Leitão, 1917

Original description: MELLO-LEITÃO, 1917c: 123. 1♀ holotype. BRAZIL. Rio de Janeiro. Nova Iguaçu. Henrique Blanc de Freitas col. MLPC 366. MNRJ 915. AVAILABLE.

82. *Tobias epicadoides* Mello-Leitão, 1944

Original description: MELLO-LEITÃO, 1944b: 11. 1♀ holotype. BRAZIL. Pará. Aurá [Igarapé Aurá, near Belém]. Antenor Leitão de Carvalho col. MNRJ. AVAILABLE.

83. *Tobias gradiens* Mello-Leitão, 1929

Original description: MELLO-LEITÃO, 1929: 89, fig.

43. 1♂ holotype. BRAZIL. Rio de Janeiro. Petrópolis. Altino de A. Sodré col. MLPC 367. MNRJ 914. NOT LOCATED

ACKNOWLEDGMENTS

I am very much indebted to Dr. Adriano Brilhante Kury (MNRJ), Dr. Antonio Brescovit (IBSP) and Dr. Renner Baptista (IB-UFRJ) for the many hints and suggestions. Many thanks to my colleagues, specially Dr. Abel Pérez (NUPEM/UFRJ), Dr. Amazonas Chagas-Junior (MNRJ); M.Sc. Alessandro Giupponi (MNRJ); M.Sc. Amanda Mendes (MNRJ); M.Sc. Gustavo Oliveira (MNRJ) and M.Sc. Pedro Romano (MNRJ) for the comments on the manuscript. This work was made under CAPES financial support.

REFERENCES

- ANDREI, M. & GENOWAYS, H., 1991. Changes in pH in Museum Storage Fluids, I-Effects of Resistal Paper Labels. **Collection Forum**, **12**(2):63-75.
- BENJAMIN, S.P.; DIMITROV, D.; GILLESPIE, R.G. & HORMIGA, G., 2008. Family ties: molecular phylogeny of crab spiders (Araneae: Thomisidae). **Cladistics**, **24**(4):1-15.
- BONALDO, A.B. & LISE, A.A., 2001. A review of the Neotropical spider genus *Stephanopoides* (Araneae, Thomisidae, Stephanopinae). **Biociências (Porto Alegre)**, **9**:63-80.
- BRESCOVIT, A.D., 1999. Araneae. In: BRANDÃO, C.F. & CANCELO, E.M. (Eds.) **Biodiversidade do Estado de São Paulo. Síntese do conhecimento ao final do Século XX. Vol.5: Invertebrados Terrestres**. Fundação de Amparo à Pesquisa do Estado de São Paulo, São Paulo, SP. p.45-56.
- ESMERIO, M.E. & LISE, A.A., 1996. Revisão taxonômica do gênero *Titidius* Simon, 1895 da região neotropical (Araneae, Thomisidae, Thomisinae). **Biociências (Porto Alegre)**, **3**:185-222.
- FORCART, L., 1961. Katalog der Typus exemplare in der Arachnida-Sammlung des Naturhistorischen Museums zu Basel: Scorpionida, Pseudoscorpionida, Solifuga, Opilionidea und Araneida. **Verhandlungen der Naturforschenden Gesellschaft in Basel**, **72**(1):47-87.
- KEYSERLING, E., 1880. **Die Spinnen Amerikas, I. Laterigradae**. Nürnberg **1**:1-283.
- KURY, A.B. & NOGUEIRA, A.L.C., 1999. Annotated check list of type specimens of Arachnida in the Museu Nacional, Universidade Federal do Rio de Janeiro, I. Scorpiones,

Pseudoscorpiones and Solifugae. **Publicações Avulsas do Museu Nacional**, **77**:1-19.

LISE, A.A., 1973. Contribuição ao conhecimento do gênero *Sidyma* no Brasil, com descrição de uma nova espécie (Araneae - Thomisidae). **Iheringia, Série Zoológica**, **43**:3-47.

LISE, A.A., 1979a. Tomisídeos neotropicais I: *Onocolus garruchus* sp.n. (Araneae - Thomisidae - Stephanopsinae). **Iheringia, Série Zoológica**, **54**:67-76.

LISE, A.A., 1979b. Tomisídeos neotropicais, IV: *Onocolus mitralis* sp.n. (Araneae, Thomisidae, Stephanopsinae). **Revista brasileira de Biologia**, **39**(2):487-492.

LISE, A.A., 1980a. Tomisídeos neotropicais III: *Onocolus latiductus* sp.n. (Araneae - Thomisidae - Stephanopsinae). **Iheringia, Série Zoológica**, **55**:37-41.

LISE, A.A., 1980b. Tomisídeos neotropicais II: *Onocolus eloeus* sp.n. (Araneae - Thomisidae - Stephanopsinae). **Iheringia, Série Zoológica**, **55**:149-153.

LISE, A.A., 1981a. Tomisídeos neotropicais V: Revisão do gênero *Onocolus* Simon, 1895 (Araneae, Thomisidae, Stephanopsinae). **Iheringia, Série Zoológica**, **57**:3-97.

LISE, A.A., 1981b. Tomisídeos neotropicais VI: *Sidyma kolpogaster* Lise, 1973, descrição do macho e nova ocorrência (Araneae, Thomisidae, Stephanopsinae). **Iheringia, Série Zoológica**, **57**:129-135.

LISE, A.A., 2005. *Rejanellus*, a new genus of Thomisidae (Araneae, Stephanopinae). **Iheringia, Série Zoológica**, **95**:151-164.

MARTINS, U., 1994. Coleções Zoológicas. In: PAPAVERO, N. (Ed) **Fundamentos práticos de Taxonomia Zoológica (coleções, bibliografia, nomenclatura)**. UNESP, São Paulo. p 19-43.

MAGALHÃES C; KURY, A.B; BONALDO, A.B; HAJDU, E. & SIMONE, L.R., 2005. **Coleções de invertebrados do Brasil: Work document for Projeto Diretrizes e Estratégias para a Modernização de Coleções Biológicas Brasileiras e a Consolidação de Sistemas Integrados de Informações sobre Biodiversidade**. Available at: <<http://www.cria.org.br/cgee/junho/docs/ColecoesdeInvertebradosMagalhaesBonaldoKuryHadju.pdf>>. Access on Dec.10 2007.

MANTOVANI, W., 1993. **Estrutura e dinâmica da Floresta Atlântica na Juréia, Iguape – SP**. Thesis (Post Doctorate.). São Paulo: Universidade de São Paulo.

MELLO-LEITÃO, C.F., 1917a. Notas arachnológicas. V. Espécies novas ou pouco conhecidas do Brasil. **Broteria (Zoologia)**, **15**(2):74-102, figs.1-24.

MELLO-LEITÃO, C.F., 1917b. Generos e especies novos

de Araneidos. **Archivos da Escola Superior de Agricultura e Medicina Veterinária**, **1**(1):3-19.

MELLO-LEITÃO, C.F., 1917c. Aranhas novas ou pouco conhecidas de Thomisidas e Salticidas brasileiras. **Archivos da Escola Superior de Agricultura e Medicina Veterinária**, **1**(2):117-153.

MELLO-LEITÃO, C.F., 1924. Algumas aranhas novas do Brasil. **Boletim do Museu Nacional do Rio de Janeiro**, **1**(4):275-281.

MELLO-LEITÃO, C.F., 1925. Pequenas notas aracnológicas. **Boletim do Museu Nacional do Rio de Janeiro**, **2**(1):1-8.

MELLO-LEITÃO, C.F., 1929. Aphantochilidas e Thomisidas do Brasil. **Archivos do Museu Nacional**, **31**:9-359.

MELLO-LEITÃO, C.F., 1931. Nota sobre arachnideos argentinos. III. Opiliões novos ou críticos. IV. Aranhas novas. **Annaes da Academia Brasileira de Ciencias**, **3**(2):83-97.

MELLO-LEITÃO, C.F., 1932. Pequenas notas aracnológicas: Nota sobre o genero *Iheringia* Keiserl. Um novo Lycosida halophilo. Dois novos opiliões. Três novos Thomisidas. **Boletim do Museu Nacional do Rio de Janeiro**, **8**:67-75.

MELLO-LEITÃO, C.F., 1939. Araignées américaines de Musée d'histoire naturelle de Bâle. **Revue Suisse de Zoologie**, **46**(2):43-93.

MELLO-LEITÃO, C.F., 1940. Aranhas do Espírito Santo coligidas por Mario Rosa, em 1936 e 1937. **Archivos do Museu de Zoologia da Universidade de São Paulo**, **2**(5):199-214.

MELLO-LEITÃO, C.F., 1941. Aranhas do Paraná. **Arquivos do Instituto Biológico**, **11**:235-257.

MELLO-LEITÃO, C.F., 1943a. Araneologica varia brasiliana. **Anais da Academia Brasileira de Ciências**, **15**(3):255-265.

MELLO-LEITÃO, C.F., 1943b. Aranhas do Chile coligidas pelo Dr. J. C. M. Carvalho. **Revista Brasileira de Biologia**, **3**(4):403-409.

MELLO-LEITÃO, C.F., 1943c. Catálogo das aranhas do Rio Grande do Sul. **Arquivos do Museu Nacional**, **37**:147-245.

MELLO-LEITÃO, C.F., 1943d. Alguns Pisauridas e Thomisidas do Brasil. **Revista Chilena de História Natural**, **45**:164-172.

MELLO-LEITÃO, C.F., 1944a. Arañas de la provincia de Buenos Aires. **Revista del Museo de La Plata (Nueva Série), Zoología**, **3**(24):311-393.

- MELLO-LEITÃO, C.F., 1944b. Algumas aranhas da região Amazônica. **Boletim do Museu Nacional do Rio de Janeiro (Nova Série), Zoologia**, 25:1-12.
- MELLO-LEITÃO, C.F., 1944c. Descripción de *Barbiellinia hirsuta* g. n., sp. n., y notas de nomenclatura aracnológica. **Comunicaciones Zoológicas del Museo de Historia Natural de Montevideo**, 1(21):2-4.
- MELLO-LEITÃO, C.F., 1947. Aranhas do Carmo do Rio Claro (Minas Gerais) coligidas pelo naturalista José C. M. Carvalho. **Boletim do Museu Nacional** (80):1-34.
- MELLO-LEITÃO, C.F., 1949. Aranhas da foz do Koluene. **Boletim do Museu Nacional do Rio de Janeiro, Nova Série, Zoologia** (92):1-19.
- MELLO-LEITÃO, C.F., 1951. Arañas de Maullín, colectadas por el Ingeniero Rafael Barros V. **Revista Chilena de Historia Natural**, 51-53:327-338.
- MORI, S.A.; BOOM B.M & PRANCE, G.T., 1981. Distribution patterns and conservation of the Eastern Brazilian coastal forest tree species. **Brittonia**, 33(2):233-245.
- O. PICKARD-CAMBRIDGE, 1869. Descriptions and Sketches of some New Species of Araneida, with Characters of a New Genus. **The Annals and Magazine of Natural History**, 4(3):52-74.
- O. PICKARD-CAMBRIDGE, 1877. On some new Species of Araneidea, with Characters of two New Genera and some Remarks on the Families Podophthalmides and Dinopides. **Proceedings of the Zoological Society of London**, 1877:557-578.
- PIZA, S.T., JR., 1933a. Novos Thomisidas do Brasil. I. **Revista de Biologia e Higiene (São Paulo)**, 4(2):45-51.
- PIZA, S.T., JR., 1933b. Novos Thomisidas do Brasil. II. **Revista de Biologia e Higiene (São Paulo)**, 4(3):88-90.
- PIZA, S.T., JR., 1934. Novos Thomisidas do Brasil. III. **Revista de Biologia e Higiene (São Paulo)**, 5(1):1-6.
- PIZA, S.T., JR., 1935. Novos thomisidas do Brasil. IV. **Revista de Biologia e Higiene (São Paulo)**, 6:126-127.
- PIZA, S.T., JR., 1936a. Novos thomisidas do Brasil. V. **Revista de Biologia e Higiene (São Paulo)**, 7:50-52.
- PIZA, S.T., JR., 1936b. Novos Thomisidas do Brasil. VI. **Revista de Biologia e Higiene (São Paulo)**, 7:86-88.
- PIZA, S.T., JR., 1937. Novos Thomisidas do Brasil. VII. **Folia Clinica et Biologica (Piracicaba)**, 9:179-183.
- PLATNICK, 2008. **The World Spider Catalog, v 9.0**. American Museum of Natural History. Available at: <<http://research.amnh.org/entomology/spiders/catalog/index.html>>.
- RINALDI, I.M.P., 1983. Contribuição ao estudo das Misumeninae do Brasil (Araneae, Thomisidae). **Revista Brasileira de Entomologia**, 27(2):147-153.
- RINALDI, I.M.P., 1984. Contribuição ao estudo de *Acentroscelus* Simon, 1886 (Araneae, Thomisidae, Misumeninae). **Revista Brasileira de Entomologia**, 28(1):109-114.
- RINALDI, I.M.P., 1988. *Misumenops* Cambridge e *Uraarachne* Keyserling (Araneae, Thomisidae, Thomisinae): sinónimas, novas combinações e redescobertas. **Revista Brasileira de Entomologia**, 32(1):19-30.
- ROEWER, C.F., 1955. **Katalog der Araneen (von 1758 bis 1940, bzw. 1954)**. Bruxelles. 2:1-1751.
- SENDALL, K. & HUGHES, G., 1997. Correcting Alcohol Concentrations. **SPNHC Newsletter**, 11(1):6-7.
- SILVA, E.L.C.; LISE, A.A. & CARICO, J.E., 2007. Revision of the Neotropical spider genus *Dossenus* (Araneae, Lycosoidea, Trechaleidae). **Insect Systematics & Evolution**, 38:139-148.
- SIMON, E., 1886. Espèces et genres nouveaux de la famille des thomisides. **Actes de la Société Linnéenne de Bordeaux**, 40:167-187.
- SIMON, E., 1895. Famille Thomisidae. In: SIMON, E. (Ed.) **Histoire Naturelle Des Araignées**, 30:949-1084. Paris
- SIMMONS, J.E., 1995. Storage in Fluid Preservatives. In: ROSE, C. & TORRES, A. (Eds.) **Storage of Natural History Collections: Ideas and Practical Solutions**. Washington, D.C.: Society for the Preservation of Natural History Collections. p 215-216.
- SIMMONS, J.E., 1999. Storage Concerns for Fluid-Preserved Specimens. **Conserve O Gram**, 11(3):1-4.
- SOARES, B.A.M., 1942 Alguns tomisidas e um salticida novos do Brasil. **Papéis avulsos do Departamento de Zoologia**, 2(19):255-265.
- SOARES, B.A.M., 1943a. Aracnídeos de Goiaz coligidos pelo Dr. Frederico Lane. I. Opiliões. II. Afantoquíidas e Thomisidas. **Papéis avulsos do Departamento de Zoologia**, 3(13):205-218.
- SOARES, B.A.M., 1943b. Novos Tomisidas Brasileiros. **Papéis avulsos do Departamento de Zoologia**, 3(1):1-18.
- SOARES, B.A.M., 1944 Quatro novos tomisidas neotrópicos (Araneae, Thomisidae). **Boletim de indústria animal (São Paulo)**, 7(3-4):73-80.
- STODDARD, D., 1989. Fixatives and Preservatives: Their Effects on Tissue. In: HORIE, C.V. (Ed.) **Conservation of Natural History Specimens: Spirit Collections**. Manchester: Manchester Museum and Department of Environmental Biology, University of Manchester. p.1-25

STRAND, E., 1942. Miscellanea nomenclatorica zoologica et palaeontologica. X. **Folia zoologica et hydrobiologica**, **11**:386-402.

WILLIAMS, B., 1987. Biological Collections UK. London: Museums Associations.

WOOD, R.M. & WILLIAMS, S.L., 1983. An Evaluation of

Disposable Pens for Permanent Museum Records. **Curator**, **36**(1993):189-200.

ZAHER, H. & YOUNG, P.S., 2003. As coleções zoológicas brasileiras: panorama e desafios. **Ciência e Cultura**, **55**(3):24-26. Available at: <<http://cienciaecultura.bvs.br/pdf/cic/v55n3/alv55n3.pdf>>. Access on Dec.10 2007.